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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,463	10/14/2004	Yuval Simha Landschaft	RO0908US (#905668)	9282

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EXAMINER	
MOHAMED, ABDEL A	

ART UNIT	PAPER NUMBER
1654	

MAIL DATE	DELIVERY MODE
12/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,463	LANDSCHAFT, YUVAL SIMHA	
	Examiner	Art Unit	
	Abdel A. Mohamed	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-10,12,13 and 16-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-10, 12, 13 and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

CONTINUED EXAMINATION UNDER 37 CFR 1.114 AFTER FINAL REJECTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/01/07 has been entered.

ACKNOWLEDGMENT OF AMENDMENT, REMARKS AND STATUS OF THE CLAIMS

2. The amendment and remarks filed 10/01/07 are acknowledged, entered and considered. In view of Applicants request claim 1 has been amended, claims 11, 14 and 15 have been canceled and claims 17 and 18 have been added. Claims 1-6, 8-10, 12, 13 and 16-18 are now pending in the application. The objection to the claims and the rejection under 35 U.S.C. 103(a) are withdrawn in view of Applicant's amendment and remarks filed 10/01/07. With respect to the rejection under 35 U.S.C. 103(a) over the prior art of record have been considered but deemed to be moot in view of the new ground of rejections as set forth *infra*.

NEW GROUNDS OF REJECTIONS

CLAIMS REJECTION-35 U.S.C. § 102(b)

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al (U.S. Patent No. 5,759,445).

The reference of Yamamoto et al ('445 patent) discloses an aqueous dispersed solution, which comprises the steps of evaporating an organic solvent from a mixture prepared by adding cholesterol, lecithin, a surfactant and a neutral lipid, and/or a cholesterol ester in the organic solvent in a specific range of the concentration ratio. The reference discloses the use of sodium cholate as the bile salt and tristearin (a sort of triglycerides), which is considered as a nutrient and sodium as ionic compound (See Examples 1-3). Since the organic sulfur compound is optional, it need not be present.

The reference does not disclose the use of a composition for transdermal administration, although, the reference discloses the use of a composition as a standard solution for determining lipid levels; nevertheless, a statement of usefulness or contemplated use of a claimed compound or composition in a claim is usually given little weight in distinguishing over the prior art. *In re Maeder et al.* (CCPA 1964) 337 F2d 875, 143 USPQ 248; *In re Riden et al.* (CCPA 1963) 318 F2d 761, 138 USPQ 112; *In re*

Sinex (CCPA 1962) 309 F2d 488, 135 USPQ 302. Further, it is well established that the intended use of a compound (e.g., a polypeptide or a protein or a glycoprotein) does not impart patentability to the compound. *In re Spada,* 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990) (The discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, can not impart patentability to claims to the known composition); *In re Pearson*, 494 F.2d 1399, 1403, 181 USPQ 641, 644 (CCPA 1974) (intended use of an old composition does not render composition claims patentable); *In re Zierden*, 411 F.2d 1325, 1328, 162 USPQ 102, 104 (CCPA 1969). Thus, the prior art discloses the invention substantially as claimed, and as such, anticipates claims 1-3 as drafted.

CLAIMS REJECTION-35 U.S.C. § 103(a)

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 8-10, 12, 13 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (U.S. Patent No. 5,759,445) taken with Guo et al (Drug Deliv. Vol. 7, No. 2, pp. 113-116, 2000), Thorand et al (Southeast Asian J. Trop.

Med. Public Health, Vol. 24, No. 4, pp. 624-630, 1993) and Scott (U.S. Patent No. 6,183,758).

The primary reference of Yamamoto et al ('445 patent) as discussed above discloses an aqueous dispersed solution, which comprises the steps of evaporating an organic solvent from a mixture prepared by adding cholesterol, lecithin, a surfactant and a neutral lipid, and/or a cholesterol ester in the organic solvent in a specific range of the concentration ratio. The reference discloses the use of sodium cholate as the bile salt and tristearin (a sort of triglycerides), which is considered as a nutrient and sodium as ionic compound (See Examples 1-3). The preferred weight ratio of the sum of the cholesterol and cholesterol ester to the lecithin is from 1:1 to 1:2, a weight ratio of the neutral lipid to the lecithin is from 1:10 to 1:5, and a concentration of the lecithin is not more than 1,000 mg/dl when the lecithin is finally dispersed in a water or buffer (See e.g. Summary of the Invention and claim 4) as directed to claims 8-10.

The primary reference of '445 patent differs from claims 1-6, 8-10, 12, 13 and 16-18 in not teaching the use of transdermal administration, use of non-oily emulsion which is a mixture of lecithin, bile salt and cholesterol with the specific ratio and amount disclosed in the claims, use of organic sulfur compound, and the use of a nutrient which is an ionic compound and the ionic compound is a metal ion. However, the secondary reference of Guo et al discloses a study of transdermal delivery of insulin (therapeutically active compound and/or peptide with molecular weight of 5808 D) in mice by using lecithin vesicles as a carrier. The study was undertaken to characterize the preparation of flexible lecithin vesicles containing insulin and to assess the

enhancing effect of these flexible vesicles on the transdermal delivery of a hydrophilic proteins or polypeptides. The reference concludes by stating flexible vesicles may become a promising carrier for transdermal delivery of hydrophilic polypeptides (See e.g. Abstract and Discussion). Further, the secondary reference of Scott ('758 patent) disclose a skin absorbent cream including as one of the ingredients methylsulfonylmethane (MSM), which softens the skin to allow penetration of the medication through the skin and into the underlying blood vessels. The MSM formulation is applicable as an emulsion or gel that forms a base cream or gel to form a medicinal structure or function cream or gel (See e.g., abstract and claim 3). The '758 patent clearly discloses the use of organic sulfur compound such as MSM for topical application (i.e., transdermal administration) in a formulation as emulsion, cream or gel, and as such meets the limitations of claims 1, 13, 17 and 18.

With respect to the limitations of a nutrient, which is an ionic compound and the ionic compound, is a metal ion, the secondary reference of Thorand et al demonstrates that the administration of iron (metal ion) supplement is an effective intervention in treating anemia caused by iron deficiency. Thus, the reference shows the administration of at least one therapeutically active compound and said at least one nutrient is an ionic compound and wherein the ionic compound is a metal ion (i.e., iron as a nutrient), and as such meet the limitation of claim 2 and 3.

The Examiner acknowledges that the primary reference of Yamamoto et al is not intended for transdermal drug delivery. The aqueous dispersed solution is merely a standard solution for determining lipid levels in sera. Similarly, the secondary reference

of Thorand et al does not disclose the use of transdermal drug delivery, however, the secondary references of Guo et al discloses the transdermal deliver of drugs such as insulin and similarly, Scott ('758 patent) discloses the topical administration of drugs. Nevertheless, a statement of usefulness or contemplated use of a claimed compound or composition in a claim is usually given little weight in distinguishing over the prior art. *In re Maeder et al.* (CCPA 1964) 337 F2d 875, 143 USPQ 248; *In re Riden et al.* (CCPA 1963) 318 F2d 761, 138 USPQ 112; *In re Sinex* (CCPA 1962) 309 F2d 488, 135 USPQ 302. Further, it is well established that the intended use of a compound (e.g., a polypeptide or a protein or a glycoprotein) does not impart patentability to the compound. *In re Spada,* 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990) (The discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, can not impart patentability to claims to the known composition); *In re Pearson*, 494 F.2d 1399, 1403, 181 USPQ 641, 644 (CCPA 1974) (intended use of an old composition does not render composition claims patentable); *In re Zierden*, 411 F.2d 1325, 1328, 162 USPQ 102, 104 (CCPA 1969).

Therefore, the combined teachings of the prior art clearly teaches the utilization of the mixtures of non-oily emulsion of lecithin, bile salt and cholesterol is a choice procedure as pointed out by the primary reference of '445 patent, and as such use of non-oily emulsion which is a mixture of lecithin, bile salt and cholesterol is deemed to be obvious to one of ordinary skill in the art because the skilled artisan would reasonably have expected that use of non-oily emulsion such as lecithin would have resulted as a promising carrier for transdermal delivery of hydrophilic polypeptides as taught by the

secondary reference of Guo et al. Thus, one of ordinary skill in the art at the time the invention was made would have been motivated to employ a composition for transdermal administration of the secondary references of Guo et al or Scott because such features are known or suggested in the art, as seen in the secondary references, and including such features (i.e., use of non-oily emulsion which is a mixture of lecithin, bile salt and cholesterol) in water of the primary reference into a composition for transdermal administration of at least one therapeutically active compound (polypeptide such as insulin) or nutrient, said composition comprising one item selected from the group consisting of at least one therapeutically active compound such as polypeptide drugs and at least on nutrient and a non-oily emulsion (cholesterol), wherein the insulin polypeptide has a molecular weight of 5808 D and optionally comprising an organic sulfur compound (methylsulfonylmethane), wherein the composition for transdermal administration of active substance which is nutrients and/or medications are useful as a cream, gel, and emulsion as taught by the secondary reference of Scott.

Further, it is known in the art as discussed by Guo et al that lecithin vesicles are used for topical and transdermal delivery of drugs in general (See e.g., page 113, left column, first paragraph and on page 116, last paragraph), which would encompass antiparasitic agents, antihelmentic agents and antibiotic agents for the treatment of humans, livestock or domestic animals.

Thus, in view of the above, it would have been *prima facie* obvious to one of ordinary skill in the art to combine the secondary references of Guo et al and Scott teachings of a composition for transdermal administration into the primary reference's

teachings because the primary reference teach the use of non-oily emulsion which is a mixture of lecithin, bile salt and cholesterol, and the secondary references use of organic sulfur compound and the use of a nutrient which is an ionic compound and the ionic compound is a metal ion . Because use of non-oily emulsions and a nutrient ionic compound which is a metal ion are known and suggested in the art as seen the combined teachings of the prior art, and including such features into the composition of the primary reference would have been obvious to one of ordinary skill in the art to obtain the known and recognized functions and advantages thereof.

Therefore, in view of the above and in view of the combined teachings of the prior art; one of ordinary skill in the art would have been motivated at the time the invention was made to use the already known composition for transdermal administration comprising therapeutically active compound such as insulin polypeptide drugs, nutrients, ionic compounds which are metal ions and non-oily emulsions such as lecithin, bile salt and cholesterol and further comprising organic sulfur compounds such as methylsulfonylmethane (MSM), wherein the composition for transdermal administration of active substance which is nutrients and/or medications are useful as a cream, gel, lotion, ointment and patch, absent of sufficient factual evidence or unexpected results to the contrary.

Although, the prior art does not teach the specific amounts of lecithin, bile salts, cholesterol and organic sulfur, and the ratio of by weight of lecithin, bile salts and cholesterol as claimed, however, the ranges claimed and cited by the prior art overlaps, and as such the selection of the appropriate specific amounts of lecithin, bile salts,

cholesterol and organic sulfur, and the ratio of by weight of lecithin, bile salts and cholesterol is conventional and within the ordinary skill of the art to which this invention pertains. Therefore, the claimed specific amounts of lecithin, bile salt, cholesterol and organic sulfur, and the ratio of by weight of lecithin, bile salts and cholesterol, which fall within the scope of the prior art would have been *prima facie* obvious from said prior art disclosure to a person of ordinary skill in the art at the time the invention was made because in the absence of sufficient objective factual evidence or unexpected results to the contrary, Applicant's claims are directed to optimization of an "art recognized variable" which is well within the purview of one of ordinary skill in the art, *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

CONCLUSION AND FUTURE CORRESONDANCE

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdel A. Mohamed whose telephone number is (571) 272 0955. The examiner can normally be reached on First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tsang Cecilia can be reached on (571) 272 0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JON WEBER
SUPERVISORY PATENT EXAMINER

AAM Mohamed/AAM
December 6, 2007